

Hist 480 Research Essay

A Most Excellent Thing:

*The introduction of brown trout (Salmo trutta) to
Canterbury, New Zealand 1864-1872*

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'This dissertation is submitted in part fulfilment of the requirements for the degree of BA Honours in History at the University of Canterbury. This dissertation is the result of my own work. Material from the published or unpublished work of other historians used in the dissertation is credited to the author in the footnote references. The dissertation is approximately 10,000 words.'

Abstract

This essay examines the process undergone in the Canterbury province in the late 1860s and early 1870s to import *Salmo trutta* (brown trout) ova from Tasmania, to hatch them out and to distribute them throughout the waterways of the province. This essay seeks to answer two questions. First, how were trout introduced? Second, why was their introduction of such significance to colonists at the time? To answer these questions this essay draws upon a comprehensive range of primary sources including Society records and newspapers. The successful importation of trout represented one of the key early achievements of the fledgling Canterbury Acclimatisation Society at a time when several other attempted introductions were failing. The process undertaken to import the ova, rear hatchlings and distribute the ‘young trout’ tested the scientific knowledge of the 1860s and 1870s. It necessitated significant interaction with international acclimatisation groups primarily in Australia but also further afield. This essay also attempts to convey the significance of the importation to Canterbury. Such was the public interest that the coverage of trout in print media extended to the hatching of individual ova or the sighting of escaped trout. Trout were afforded a romanticised status in colonial New Zealand society, largely as a result of their construction as a quintessentially British object. Their importation was motivated by several factors, namely the re-creation of a British ecology in New Zealand, the recreational opportunities they afforded and the food source they provided.

Preface

My first encounter with a brown trout took place in 2005 on a small tributary of the Mohaka River in Hawke's Bay. I'd been fly-fishing for a few years, albeit with limited success, before I eventually caught my first brown. It wasn't until I got my drivers license and was able to fish the rivers around my hometown of Wellington that brown trout and I got better acquainted. In 2008 I moved to Christchurch, in theory to study law and history at the University of Canterbury, but more importantly in my mind to get to know the rivers and trout of the Canterbury backcountry. During my time in Christchurch two things have flourished above all else: my love of fly-fishing and my love of history. This research essay has given me the opportunity to combine these interests. When I settled on my topic at the start of the year I felt as if I'd pulled off a grand heist. I genuinely couldn't believe that my supervisor, Katie Pickles, was going to allow me to write on something that initially struck me as far removed from academia. And yet, the more I trawled through Archives NZ, searched the plethora of articles on Papers Past, or read widely on New Zealand environmental history, the more I realised that what I was writing was, in fact, novel and legitimate history. The importation of brown trout inherently deals with important areas of New Zealand's environmental and colonial history. Despite fly-fishing's history as a common hobby, no one had addressed the introduction of brown trout to Canterbury in any detail or in an historical context. Whilst my research essay deals specifically with Canterbury, there is immense scope for subsequent research expanding the parameters to consider the introduction of trout on a national level. I'm sure many students feel the need to pander to their professors and state how much they have enjoyed the year and their research. I feel no need to pander, but I can quite honestly say that this research has been the most enjoyable I've conducted in 6 years at University. I hope my enthusiasm for the subject is evident in my writing. For whilst this is a serious, academic analysis of the introduction of brown trout to Canterbury and the motivations of those that introduced them, it is also simply a fascinating story that should engage the reader regardless of whether they have any prior interest in trout fishing or New Zealand's environmental history.

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Introduction

‘We should like to see the hare and the partridge in our fields, the stately deer, the roe and the pheasant occupying our hills and our forests, whilst our Alpine rivers are well calculated for the propagation of the salmon and trout.’

- Dr Julius Haast¹

Salmo trutta, more commonly referred to as brown trout,² is a salmonid species of fish native to the waterways of Europe. The streams of New Zealand, and specifically Canterbury, possessed several native species of galaxiids, bullies and eels prior to European colonisation, yet no salmonoids. Today, if one wades the lowland rivers or high-country streams of Canterbury,³ brown trout and other salmonoids are a common and welcome sight, especially for those of us with a penchant for fly-fishing. Following the establishment of the Canterbury Association settlement in 1850, discussions began amongst colonists to fill the rivers and lakes with trout and salmon. The introduction of brown trout has been addressed to some extent by the likes of Samuel Charles Farr,⁴ Robert Cameron Lamb⁵ and Robert McDowall,⁶ but it has never before been addressed with an intensive focus on species, location and time period. It is therefore imperative that I base my work heavily on the numerous primary sources available. Furthermore, it is important for me to acknowledge my use of a largely chronological narrative approach. Where something is studied, and written about, for the first time, as in this instance, it is important that the story is told in a comprehensive fashion. Through this approach this essay will also convey something of the personalities and motivations of those primarily responsible for the introduction of brown trout. It should also be noted that this essay focuses solely on the Canterbury region. Other acclimatisation societies were importing trout around the same time; however, they will only be referred to in this paper with regards to their interactions with the Canterbury Acclimatisation Society (CAS).⁷ Similarly, I have chosen to largely ignore the introduction of other fish species such as salmon and perch, which were often taking place concurrent to trout, in order to retain the focus

¹ Julius Haast, cited in R.C. Lamb *Birds, Beasts and Fishes: The first hundred years of the Canterbury Acclimatisation Society* (Christchurch: North Canterbury Acclimatisation Society, 1964), p.16.

² Or in the early literature this papers focuses upon, simply ‘trout.’

³ At least those that have not yet succumbed to the de-watering, run-off or pollution of dairy.

⁴ S.C. Farr, *History of Trout Culture in Canterbury, N.Z.* (Canterbury: Canterbury Acclimatisation Society, 1880).

⁵ R.C. Lamb, *Birds, Beasts and Fishes*.

⁶ R.M. McDowall, *Gamekeepers for the Nation: the story of New Zealand's acclimatisation societies 1861-1990* (Canterbury: Canterbury University Press, 1994).

⁷ The word acclimatisation is spelt by various sources at the time with either a ‘s’ or a ‘z’. This essay will use the UK English spelling of acclimatisation in all instances.

exclusively on trout. Initially, the formation of the CAS, which was ultimately responsible for the procurement and propagation of brown trout in Canterbury, will be examined along with the early discussions with the Tasmanian Acclimatisation Society about the purchase of brown trout ova. Implicit within this is a demonstration of the desire of settlers to possess brown trout, although the substantive analysis of the settlers' motivations will be addressed in the final section. Subsequently, the actual process of acquiring trout ova and hatching them out into the CAS's fishponds will be documented. This was a period of great public interest in the introduction of brown trout and tales of the trials and tribulations of hatching the ova out, and raising the resultant young trout to maturity, frequently featured in local papers. Following the establishment of a thriving captive population contained in ponds, significant effort was then made to distribute the ova and young trout both into suitable rivers and to the acclimatisation societies of other provinces. By 1872 the result was a substantial population of, now wild, brown trout in select rivers and streams around the Canterbury province. Finally, I will engage with the secondary literature in elucidating why such effort, energy and money were expended bringing brown trout to New Zealand. As a result of this analysis the motivations behind the introduction will be demonstrated. It must be concluded that the introduction of brown trout to Canterbury by the CAS ranks amongst the most significant achievements of New Zealand acclimatisation. The introduction was made at a time when there was no certainty as to success, and yet from a relatively small initial stock the CAS, under the curatorship of Andrew Mensal Johnson, was able to breed sufficient trout to stock the entire Canterbury region and to provide trout to numerous other provinces.

Chapter One: The planting of a seed, 1853-1867

‘It would be a most excellent thing to have our rivers stocked with Salmon and Trout’
- Canterbury Acclimatisation Society⁸

There existed among early British colonists to New Zealand a very real desire to procure and propagate fish and game species that were familiar to them, within their newfound domain. The philosophical and cultural reasons for this will be addressed in the final section pertaining to the motivations behind the importation, but it is beneficial to briefly set the scene for the introduction by demonstrating the public impetus and excitement behind the project. In the years prior to Andrew Johnson’s⁹ failed attempt to import trout in 1864 a great deal of thought and discussion was expended on the introduction of brown trout and the establishment of an acclimatisation society to facilitate the introduction. It is also important to remember that during the period in which these early discussions were taking place in New Zealand, successful attempts to import brown trout were taking place in Tasmania. The Canterbury effort benefited hugely from the re-publication of letters and articles dictating the Tasmanian methods.

The editor of the *Lyttelton Times* in 1853,¹⁰ warned readers of the deluded claims of the Canterbury Settlement, amongst which was that ‘real British trout of the purest breed were to dart athwart the mountain torrents.’¹¹ This belief amongst participants in the Canterbury Settlement that trout were to be introduced in the years following their own voyage may to some extent explain the public pre-occupation with the eventual introduction. The leader of the Canterbury Settlement, John Robert Godley, went so far as to state: ‘If the Association goes on and flourishes it could not do better than send out by each ship that it charts, pairs of these animals until it receives intelligence that a sufficient number to make the propagation of the species certain

⁸ North Canterbury Acclimatisation Society, “Proceedings at the Second Annual Meeting,” *North Canterbury Acclimatisation Society Annual Reports 1864-1884* (Christchurch: Ward and Reeves), p.33.

⁹ Johnson is at various stages immediately following his immigration to New Zealand spelled ‘Johnson’ and ‘Johnston’. His own signature omits the ‘t’, and this is the spelling that subsequently comes to be used exclusively.

¹⁰ Likely James Edward Fitzgerald; See ‘Fitzgerald, James Edwards,’ *Te Ara Encyclopedia of New Zealand*, Accessed October 6, 2013, <http://www.teara.govt.nz/en/biographies/1f9/fitzgerald-james-edward>.

¹¹ “The Canterbury Settlement,” *Lyttelton Times*, June 4, 1853, 7.

have safely landed.’¹² So great was the desire of the Canterbury Association to see these populations develop that they declared they would present a gold medal to ‘the colonist who should first be successful in introducing fresh-water fish into the lakes and rivers of the settlement.’¹³ In May 1859 James Edward Fitzgerald, who had previously served as Superintendent of the Canterbury province, wrote to the current Superintendent, William Sefton Moorhouse, about the merits of importing fish and game to the colonies.¹⁴ Fitzgerald’s primary focus was to demonstrate the merit of introducing salmon to New Zealand, but implicit in this was a desire to see trout and other species flourish in New Zealand waters. This letter elicited a response, published in the *Lyttelton Times*, from Mark Stoddart, an early Canterbury authority on pisciculture, who disparaged the notion of importing salmon due to their difficult breeding pattern. He did, however, state that: ‘Trout, and even the sea trout, could be easily accommodated with a nursery in the brook either at Purau or Charteris Bay, and I would look after them myself, and from thence they could be removed to other streams.’¹⁵ In June of the same year, the *Lyttelton Times* printed an article noting the prospective commercial benefits to the introduction of *Salmonidae*, along with outlining some technical difficulties in the voyage that must be overcome before successful importation might occur.¹⁶ Interspersed between these local articles were reports of progress in the importation of salmonids to Australia¹⁷ or fish breeding techniques in Canada.¹⁸ Increasingly, there was a real interest in the formation of an official Canterbury Acclimatisation Society, as suggested by Dr Julius Haast in 1862, to match those emerging in other parts of the country.¹⁹ However, it was not until early in 1864 that real progress was made. As Mark Stoddart stated in his letter to the *Lyttelton Times*: ‘A movement is now being made towards the formation of an

¹² John Robert Godley, cited in R.C. Lamb, *Birds, Beasts and Fishes*, p.12.

¹³ “Proceedings of the Canterbury Association in England,” *Lyttelton Times*, Vol.1 Issue.23, June 14, 1851, 5.

¹⁴ James Fitzgerald “On fish and game to the colonies, May 27, 1859,” Letter. From Archives New Zealand (accessed May 2, 2013).

¹⁵ Mark Stoddart, “The Introduction of Salmon Into New Zealand,” *Lyttelton Times*, June 15, 1859, 4.

¹⁶ “Colonization of Fresh Water Fish,” *Lyttelton Times*, July 30, 1859, 4.

¹⁷ “Acclimatisation,” *Age*, printed in *Lyttelton Times*, August 31, 1861, 3.

¹⁸ “Fish Breeding in Canada,” *Lyttelton Times*, July 11, 1860, 3.

¹⁹ “Town and Country News,” *Lyttelton Times*, July 26, 1862, 4; It is also important to acknowledge that, much like the transition of species from Europe to Australia to New Zealand, the concept of acclimatisation moved in the same pattern. Thus the first British acclimatisation society was founded in 1860, followed by Victoria in 1861 and then Nelson in 1863; see Paul Star, “T.H. Potts and the Origins of Conservation in New Zealand (1850-1890)” (MA diss., University of Otago, 1991), 122. McDowall contests that Nelson was the earliest NZ society, suggesting that Auckland in fact inaugurated in late 1861; R.M. McDowall, *Gamekeepers for the Nation*, p.19.

acclimatisation society and subscriptions have been promised to a considerable amount.²⁰

On the 19th of April 1864 a public meeting took place at the Christchurch Town Hall, where the resolution to form a ‘Canterbury Horticultural and Acclimatisation Society’ was moved and carried.²¹ Of particular significance to the tale of the trout was the gift to the CAS by the Provincial Government of four acres of land adjacent to the river Avon, where a house was built for the Society’s curator Andrew Johnson.²² The acclimatisation grounds were located in the botanical gardens between the Avon, the Hospital and Riccarton Road, and formed the base of operations for the introduction of brown trout (see figure one). The hatchery’s specific site is marked today by a commemorative plaque in the Botanical Gardens (see figure four).

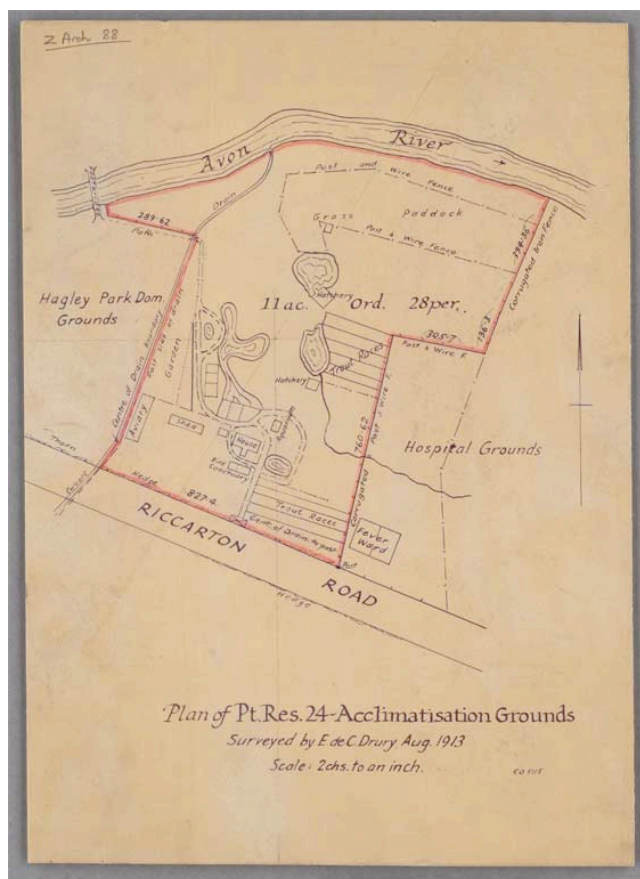


Figure 1. Map of the Canterbury Acclimatisation Grounds c. 1913

[Source: Christchurch City Libraries, accessed October 6, 2013, <http://christchurchcitylibraries.com/Heritage/Maps/246963.asp>]

²⁰ “Acclimatisation,” *Lyttelton Times*, February 18, 1864, 5.

²¹ “Acclimatisation,” *Lyttelton Times*, April 21, 1864, 3.

²² R.C. Lamb, *Birds, Beasts and Fishes*, p.17.

Andrew Johnson's voyage to New Zealand in 1864 represents a particularly significant moment in this story, as it was the first attempt to bring brown trout, amongst a myriad of other species, to New Zealand. Andrew Johnson, originating from Alvechurch, near Birmingham, first made contact with the Canterbury Provincial Secretary, who passed his letter on to the CAS, prior to his emigration to New Zealand.²³ He announced his intention to transport freshwater species to New Zealand on the *British Empire*,²⁴ and 'offer the salmon, trout, and lobsters to the Government.'²⁵ Unlike other fish transportations Andrew Johnson attempted to transport live fish as opposed to ova, necessitating the establishment of elaborate slate lined tanks on the *British Empire*.²⁶ At some stage during the journey a piece of lead entered the containers, which were earlier warped during transportation to the docks, 'depriving Mr. Johnson of his last chance of success.'²⁷ Upon arrival into Lyttelton on the 6th of September 1864, the only fish that had survived the journey were a small number of goldfish; no trout, salmon or char had survived the journey.²⁸ Andrew Johnson's attempt must be categorised as an abject failure, however, as the first attempt to bring brown trout to the country it still remains a seminal moment in the history of brown trout in New Zealand.

The establishment of an official CAS with its own grounds and curator facilitated a distinct acceleration in the importation process of brown trout. It brought people interested in procuring foreign fish species together for monthly meetings at the Christchurch Mechanics Institute,²⁹ as well legitimising their actions and providing a concentration of funding. Immediately, in September 1864, plans were made for alterations to fishponds at the CAS's site.³⁰ At this same meeting it was moved that the Canterbury province be asked to pledge £300 towards the introduction of freshwater fishes to Tasmania in the hope that they may subsequently be brought

²³ A.M. Johnson (Birmingham) to Provincial Secretary – "bringing out salmon, trout and lobsters per 'British Empire' 25/07/1864," Letter. From Archives New Zealand (accessed May 2, 2013).

²⁴ "Shipping Intelligence," *Lyttelton Times*, September 8, 1864, 4.

²⁵ "Canterbury Acclimatisation Society," *Lyttelton Times*, July 30, 1864, 4.

²⁶ Untitled, *Press*, September 12, 1864, 2.

²⁷ Ibid.

²⁸ Ibid.

²⁹ North Canterbury Acclimatisation Society, *North Canterbury Acclimatisation Society Annual Reports 1864-1884*, p.1.

³⁰ "A Ratcatcher," *Lyttelton Times*, 17 September, 1864, 3.

across the Tasman to New Zealand.³¹ Andrew Johnson's salary was also set at £150 per annum, with accommodation, for the initial three-month engagement.³² On the 8th of November 1864, Andrew Johnson wrote to the Secretary of Public Works requesting permission to carry out work to alter the water flow to the ponds.³³ In March of the 1865, the alterations to the fishponds were in full flight: 'The ponds have been formed out of old gravel pits, and divided into compartments for trout, perch and tench, the loose character of the subsoil being made retentive enough without having recourse to the expense of puddling.'³⁴ Water entering the pond system was filtered through a double grating of perforated zinc filled with charcoal, ensuring a constant supply of appropriately clean water. By October 'the grounds [were] reaching such a condition that the visitor can have some idea of what the design and plan [will be] when completed.'³⁵ Over the course of this period, members of the CAS were engaged in communication with members of their respective Society in Tasmania regarding the fruits of their labour. At the November meeting a letter was read from Dr. Robert Officer of the Tasmanian Acclimatisation Society, which stated:

The trout have, from the first, thriven admirably, and have always hitherto kept somewhat in advance of the salmon in growth and advancement. [...] With regard to the mode of transmitting a supply of salmon and trout to your shores there can be no doubt that they must be sent in the form of ova. [...] Placed between layers of moist moss, in small wooden boxes, the ova will safely reach their destination at a very small cost.³⁶

Largely because of the slow nature of trans-Tasman communication in the 1860s, the importation of trout was often only addressed at every second meeting. Thus in March of 1866, a further letter from Robert Officer was received, stipulating that 'the Commissioners have already very strongly objected to any division of the ova, until the fish has been finally and beyond all risk of disappointment established in one locality.'³⁷ Despite this perceived delay, Andrew Johnson stated in July that he expected to be in receipt of both trout and salmon ova within the next month, and accordingly he requested permission to dig an artesian well to supply water.³⁸

³¹ Ibid.

³² Ibid.

³³ A.M. Johnson to Secretary Public Works – "Requests water for Acclimatisation Fish Ponds – 8/11/1864" Letter. From Archives New Zealand (accessed May 2, 2013).

³⁴ "Acclimatisation," *Press*, March 1, 1865, 2.

³⁵ "The Lyttelton Times," *The Lyttelton Times*, 2 October, 1865, 2.

³⁶ "Acclimatisation Society," *Timaru Herald* 4 November, 1865, 3.

³⁷ "Acclimatisation," *Press*, March 30, 1866, 2.

³⁸ "Acclimatisation Society," *Lyttelton Times*, July 28, 1866, 2.

On August the 22nd 1866, Andrew Johnson wrote to the Provincial Secretary stating that he had received information from Hobart Town to say that trout ova were ready for transmission.³⁹ At a special meeting of the CAS held the following day, the letter from Robert Officer was read to the council stating that the Tasmanian Salmon Commissioners believed they would be able to furnish the CAS with 500-1,000 brown trout eggs. There was much debate amongst the members of the CAS as to whether to take Robert Officer up on his offer, but ultimately they decided that the best course of action was to delay the transmission of ova until the following year, when all work on the ponds had been completed and it was possible to send someone to Hobart Town to receive the shipment personally.⁴⁰ Surprisingly, following this resolution, there is very little mention of trout in the proceedings of the CAS for the remainder of 1866. As a result of a fouling of the fishponds in early-1867,⁴¹ the sinking of the artesian well for the supply of water was accelerated and, by May of 1867, two such wells had been sunk 'thus rendering the ponds in point of purity and temperature all that can be desired.'⁴² The CAS was finally ready to receive ova from Tasmania, yet there appeared to be relatively little impetus from within the CAS to actually take the final plunge. This stagnation was evidently apparent to the public, as the *Lyttelton Times* received a letter in June questioning why 'after so much public money has been obtained for acclimatisation, is the most important and long-expected event as the stocking of our rivers with salmon and trout to be treated with so much neglect and indifference?'⁴³ Andrew Johnson immediately wrote in reply, adamantly denying that the CAS had given up on the project and implying that the actual importation was imminent.⁴⁴ Nor were these idle words. The CAS had only been in existence for five years, but the desire amongst colonists for trout in the streams and lakes far preceded it. Finally, the CAS was ready to receive the brown trout ova offered to them by Tasmania.

³⁹ A.M. Johnson to Provincial Secretary "Trout Ova Available from Tasmania," Letter. From Archives New Zealand (accessed May 2, 2013).

⁴⁰ "Acclimatisation Society," *Lyttelton Times*, August 23, 1866, 2.

⁴¹ "Acclimatisation Society," *Press*, February 23, 1867, 2.

⁴² "Acclimatisation Society," *Press*, May 8, 1867, 2.

⁴³ "The Introduction of Salmon and Trout," *Lyttelton Times*, June 12, 1867, 3.

⁴⁴ "The Introduction of Salmon and Trout," *Lyttelton Times*, June 17, 1867, 2.

Chapter Two: The establishment of a population, 1867-1868

‘The time is now approaching when the realization of the deferred hopes of our society of obtaining a supply of both trout and salmon ova may be in a fair way of accomplishment.’

- A.M. Johnson⁴⁵

The impending introduction of brown trout ova dominated the proceedings of the CAS during the middle of 1867. At the June meeting of the CAS the ‘desirability of sending the secretary [A.M. Johnson] over to Tasmania was then discussed.’⁴⁶ There was little enthusiasm amongst members of obtaining funding from the Government to facilitate the transportation, however they believed that the funds they had at hand might be sufficient. A motion was put forward that Andrew Johnson prepare an estimate of his travel costs to put to the CAS at a special meeting on the 4th of July. Also read was a letter Andrew Johnson had sent to Robert Officer on the 1st of June requesting information regarding the possibility of a Captain Thomson being entrusted to convey the ova to Canterbury in lieu of Andrew Johnson himself.⁴⁷ On the 4th, Andrew Johnson submitted his estimate of expense, but was ultimately told by the CAS that the project would be deferred for the present, as the funds were simply not suitable and Robert Officer had not yet replied to the letter written to him.⁴⁸ It was not until a subsequent special meeting was held the following month on the 8th of August that the introduction of brown trout was finally given the go ahead. Andrew Johnson accepted that the CAS could not fund his trip, so instead proposed an alternative arrangement: ‘That, instead of increasing the salary of the Secretary, he be allowed so much on every fish hatched over one month old, the expense of obtaining them to be borne by the Secretary.’⁴⁹ Andrew Johnson would, therefore, ‘proceed to Tasmania for the purpose of procuring salmon and trout ova at his own expense’ and be recompensed at a rate of ‘£1 per head up to £100 for every fish, salmon, or trout reared (i.e. six weeks old) and that the society, looking at the responsibility which Andrew Johnson hereby incurs, offers to give him £30 in advance of his salary towards defraying his expenses.’⁵⁰ The motion was moved, seconded and carried:

⁴⁵ “Acclimatisation,” *Press*, June 29, 1867, 2.

⁴⁶ *Ibid.*

⁴⁷ *Ibid.*

⁴⁸ “Town and Country,” *Lyttelton Times*, July 5, 1867, 2.

⁴⁹ “Acclimatisation Society,” *Lyttelton Times*, August 9, 1867, 2.

⁵⁰ *Ibid.*

Andrew Johnson was going to Tasmania, and trout ova were coming back with him to New Zealand.

Concurrent to Andrew Johnson's plans, preparations were taking place in the House of Representatives to ensure the protection of trout and salmon upon their eventual arrival to New Zealand. Thus on the 20th of August, a Bill for the Protection of Salmon and Trout was introduced and read for the first time.⁵¹ It is difficult to determine the precise date on which Andrew Johnson left for Tasmania; however, it is likely that he departed immediately following the special meeting on the 8th of August.⁵² By the 7th of September 1867, he had arrived in Melbourne and was about to be dispatched onwards to Hobart Town.⁵³ By the 16th of September, Andrew Johnson had made it to Hobart Town and was in discussions with the Salmon Commissioners.⁵⁴ He carried with him a selection of birds from the Otago Acclimatisation Society (OAS) as a gift for their Tasmanian counterparts. Andrew Johnson wrote back to the CAS that he was: 'sanguine as to the prospect of obtaining a supply of trout ova both for the Canterbury and Dunedin Societies, which in the quantity promised, far exceeds his expectations.'⁵⁵ On Saturday the 21st of September, Andrew Johnson returned to Lyttelton aboard the *S.S. Rangitoto* carrying with him the object of the CAS's attention: trout ova.⁵⁶ The *Lyttelton Times*, on the 23rd of September, carried a detailed description of the process by which Andrew Johnson transferred the trout:

The ova, which were spawned shortly before Mr. Johnson's arrival in Tasmania, in a little rill connected with the ponds at the Plenty, were packed in moss in three boxes, containing 400 each. The boxes were perforated and placed in a larger one, also containing moss. The passage to Melbourne was very rough, and the boxes were much shaken. The stormy weather having delayed the steamer, a weeks detention in Melbourne was the consequence, during which time the boxes were packed in ice at the works of the Victorian Ice Company. On the departure from Melbourne of the *Rangitoto*, the box was slung on board the steamer, and a fresh supply of ice obtained from the Company [...] During this time [the voyage to Lyttelton] the ova were carefully watched and a fresh supply of ice was placed in the outer box every two hours, and the moss kept saturated with the coldest fresh water procurable.⁵⁷

⁵¹ William Murison, 20 August 1867, *Parliamentary Debates*, Vol.1, Pt.1 (Wellington: Government Publisher, 1867), p.545.

⁵² "The Press. Monday, September 23, 1867," *Press*, September 23, 1867, 2.

⁵³ "The Press. Saturday, September 7, 1867," *Press*, September 7, 1867, 2.

⁵⁴ "Town and Country," *Lyttelton Times*, September 16, 1867, 2.

⁵⁵ *Ibid.*

⁵⁶ "Town and Country," *Lyttelton Times*, September 23, 1867, 2.

⁵⁷ *Ibid.*

On arrival in Otago, Andrew Johnson relinquished one of the three boxes (see figure two) to the care of the OAS, who had assisted in facilitating his voyage. Thus when he arrived in Lyttelton, he had in his possession approximately 800 brown trout ova.⁵⁸ The ova were immediately conveyed to the facilities prepared for them at the gardens and placed in the breeding box, ‘which [was] supplied with water from an artesian well by pipes.’⁵⁹ Unsurprisingly, ‘from the transmission of ova, the rough weather experienced, and the unavoidable detention at Melbourne, a small percentage has perished, but as far as can be at present ascertained, the remainder are in a healthy condition, and Andrew Johnson himself entertains no doubt of the successful hatching of fish.’⁶⁰ The enthusiasm resulting from this, the first successful introduction of brown trout ova to New Zealand, was not limited to members of the CAS. As noted in *The Press* ‘A great number of visitors were present yesterday [Sunday the 22nd of September] in the gardens, but Andrew Johnson wisely refused to allow the ova to be seen.’⁶¹ *The Press* further concluded: ‘We can now congratulate the province on having over 500 live trout within it, and hope that the same success may attend Andrew Johnson in rearing the young fish as he has met with in bringing them here.’⁶²



Figure 2. Tasmanian acclimatisation box used to transport trout and salmon ova c.1860s

[Source: Tasmanian Museum and Art Gallery, accessed October 6, 2013, <http://shapingtasmania.tmag.tas.gov.au/M/object.aspx?id=2.>]

⁵⁸ “Acclimatisation Society,” *Lyttelton Times*, September 28, 1867, 2.

⁵⁹ “Town and Country,” *Lyttelton Times*, September 23, 1867, 2.

⁶⁰ *Ibid.*

⁶¹ “The Press. Monday, September 23, 1867,” *Press*, September 23, 1867, 2.

⁶² *Ibid.*

However, this early enthusiasm diminished with the increasing realisation of the extent of ova mortalities from the difficult voyage. By early October, there were real concerns about the viability of using artesian water so ‘some of the ova were therefore transferred in a box made for this purpose and placed in the river; but the result of the change proved anything but satisfactory.’⁶³ After all the effort undertaken by the CAS to prepare suitable habitation for the ova, and the personal expense of Andrew Johnson in transferring the trout, there appeared to be a very real possibility that this entire enterprise would be for nothing. The report from the monthly acclimatisation meeting read: ‘day by day, they seemed to be getting bad.’⁶⁴ Yet, on the 10th of October, amidst growing doubt, one ovum hatched into what was the very first live trout in New Zealand.⁶⁵ Coincidentally, the *Salmon and Trout Act 1867* passed the following day.⁶⁶ The purpose of this Act is self-evident and it provided a legal basis for the imposition of penalties for persons deemed to be breaching its regulations.⁶⁷ In the days that followed the first hatching, Andrew Johnson observed a further young trout and, fortuitously, another was discovered amongst the shingle in the breeding box.⁶⁸ The sum total of the efforts of the CAS, and specifically Andrew Johnson, was three young trout, hatched of the 800 ova brought into the acclimatisation grounds, equating to a mere £3 recompense for Andrew Johnson. Whilst this does represent the first live brown trout to have lived and hatched in New Zealand, and accordingly should be viewed as a remarkable achievement in its own right, the reality is that the CAS had far grander aims. Establishing a breeding population from which to propagate future ova from just three trout would be an extremely difficult task.

The popularity of the three young trout, no more than a few inches long, in newspaper articles in the following weeks was a testament to the public excitement and interest in the importation of brown trout. The trout evidently appeared ‘healthy and seem to

⁶³Untitled, *Press*, October 11, 1867, 2.

⁶⁴“The Press. Monday, October 14, 1867,” *Press*, October 14, 1867, 2.

⁶⁵ Ibid.

⁶⁶“The Past Session of the General Assembly,” *Lyttelton Times*, October 21, 1867, 3; This act is referred to both as the *Salmon and Trout Act 1867* and the *Salmon and Trout Protection Act 1867*. There is unusually little information about this Act in newspapers or the proceedings of the CAS, which I believe is a reflection on the detachment of the CAS (and the importation of brown trout) from the national Government.

⁶⁷ Despatches from the Governor of New Zealand to the Secretary of State, *Appendix to the Journal of the House of Representatives*, 1868, A-1, 15; The Appendices to the Journal of the House of Representatives contained numerous references to the importation of salmon, but the importation of trout was only referred to relative to the introduction of salmon.

⁶⁸“Town and Country,” *Lyttelton Times*, October 22, 1867, 2.

thrive upon the native fish which have been provided for them.’⁶⁹ Despite this, amongst the CAS members there were still those that thought the introduction premature.⁷⁰ The trout, entirely unaware of the deliberations and drama surrounding their existence, continued to gain weight at a fast rate.⁷¹ By the end of November 1867 they had consumed the entirety of the native fish in their enclosure, and appeared to scorn the grated liver proffered by Andrew Johnson as an alternate food source.⁷² Perhaps as a result of this lack of food ‘they became dissatisfied with their nursery home, and one little fellow effected his escape by wriggling his way under the stones through a little unevenness in the bottom of the perforated slate grating.’⁷³ Much to the consternation of Andrew Johnson, a further trout managed to escape in the same manner just a few days later.⁷⁴ It is not immediately apparent where these trout went, however it is likely that they did not make it to the Avon but rather were stranded in another pond. Thus by the end of 1867 Andrew Johnson retained just one of the trout he was charged with raising, making the establishment of a breeding population an impossibility. The loss of two out of the three trout that hatched from that initial importation was a devastating loss to the CAS, and represented a major setback in the establishment of a permanent population of brown trout in the waterways of Canterbury.



Figure 3. Brown trout centenary stamp, 1967

[Source: Joan Druett, *Exotic Intruders* (Auckland: Heinemann, 1993), p.135.]

The poor survival rate and the eventual escape of two thirds of the surviving stock resulted in somewhat of a stagnation of the importation process. In early 1868

⁶⁹ Ibid.

⁷⁰ “Acclimatisation Society,” *Lyttelton Times*, October 26, 1867, 2.

⁷¹ “Town and Country,” *Lyttelton Times*, November 28, 1867, 2.

⁷² Ibid.

⁷³ Ibid.

⁷⁴ Ibid.

Andrew Johnson continued to raise ‘his solitary little trout,’⁷⁵ but the overall mood of the CAS regarding the importation seemed to have taken on a pessimistic air. A significant flood on the 4th of February 1868, in which the gardens were submerged and the remaining trout was washed out towards the river, did nothing to assuage these pessimistic feelings.⁷⁶ However, in mid-February a stroke of luck befell the CAS. In Andrew Johnson’s own words: ‘With a faint hope of their recapture, a spawning race was prepared near their rearing home, and at the season two of the lost trout were seen and secured.’⁷⁷ The brief burst of freedom seems to have accorded well with the trout, as ‘the truant has greatly improved in appearance during his long absence.’⁷⁸ The truant trout were then returned to the now reinforced pond at the Acclimatisation grounds.⁷⁹ During this period the OAS had also instigated their own importation from Tasmania, with the ova arriving in what appeared to be very good condition in Port Chalmers on the 3rd of May.⁸⁰ In mid-May Mark Stoddart urged the CAS to make arrangements to attain some of season’s ova from Tasmania.⁸¹ He further suggested that perhaps their greatest chance of success was in the mountain lakes, and particularly Lake Coleridge. Thus it was that in June of 1868 preparations were well underway to undertake a second importation of brown trout from Tasmania.⁸² As the *Star* reported: ‘Great precautions have been taken to procure a more favourable result than last year [...] The ova are to be packed in four different ways, and the appliances have all been constructed by the curator himself.’⁸³ The reality is that no one was entirely sure what the best way to transport these ova was, so each importation was an experiment informed by that which had gone before it.

⁷⁵ “The Lyttelton [sic] Times. Thursday, May 7, 1868,” *Lyttelton Times*, May 7, 1868, 2.

⁷⁶ “Acclimatisation Society,” *Lyttelton Times*, February 8, 1868.

⁷⁷ Andrew Johnson, cited in G.M. Thomson, *The Naturalisation of Animals and Plants in New Zealand*, (Cambridge: Cambridge University Press, 1992), p.213; There is an interesting discrepancy between information in newspapers and CAS records, and what Andrew Johnson himself stated. Andrew Johnson, as cited in Thomson (1992), appears to say at a later date that all three trout were lost in this flood. However, at the CAS meeting only one trout was stated as having been lost. Furthermore, the two trout that had previously escaped are unaccounted for in Mr Johnson’s statement. Whilst I have attempted to elucidate the truth, the reality with any work of this nature is that there are going to be things that simply cannot be definitively stated; this is one of them.

⁷⁸ Thomson, *The Naturalisation of Animals and Plants in New Zealand*, p.213 .

⁷⁹ “Acclimatisation Society,” *Press*, February 29, 1868, 2.

⁸⁰ “The Press Thursday, May 7, 1868,” *Press*, May 7, 1868, 2.

⁸¹ “Town and Country,” *Lyttelton Times*, May 22, 1868, 2.

⁸² “Local and General,” *Star*, June 26, 1868, 2.

⁸³ *Ibid.*

Despite the belief amongst members of the CAS that they may have lodged their request with the Tasmanian Society too late to receive ova that year,⁸⁴ by early September it appeared that ova were on their way as expected.⁸⁵ This importation took a very different form to the previous years' efforts, with no member of the CAS travelling to Tasmania to receive eggs. Rather, the eggs were packaged by the Tasmanian Society and entrusted to Captain Thompson of the barque *Southern Cross*.⁸⁶ Arriving into Lyttelton on the morning of the 16th of September 1868, Captain Thompson and his chief officer Mr Boon were greeted by Andrew Johnson, who received approximately 1,000 brown trout ova and facilitated their transportation by rail to the Acclimatisation grounds.⁸⁷ Over the course of the voyage, both ice and cool fresh water were used to prevent the premature hatching of the ova. Where the previous year it was apparent to Andrew Johnson and others that numerous of the ova had gone bad, on this occasion hopes were much higher and developments took place almost immediately: 'Very few of the eggs have gone bad since our last notice, and on Monday [the 21st of September] hatching commenced.'⁸⁸ By Thursday the 24th, just eight days after the ova were received, approximately 300 young trout had hatched at the Acclimatisation grounds.⁸⁹ The following day the CAS met and expressed its deep gratitude to Captain Thompson, agreeing to purchase and present to him a 'piece of plate with a suitable inscription, of the value of £20, [...] in recognition of his services.'⁹⁰ It was reported that: 'out of the 1,000 trout ova received, 300 had already hatched; 200 of the remaining eggs were evidently spawned later, and do not appear so healthy as could be wished.'⁹¹ As a result of the use of the multiple transportation methods devised by Andrew Johnson, a consensus was reached that the best method was indeed to pack the ova in sponge or moss. Andrew Johnson further proposed to feed the newly hatched young trout a diet of boiled eggs and liver until they were of sufficient size to be placed in the ponds containing more natural food sources. The young trout appeared to flourish on this unorthodox diet,

⁸⁴ "The Press. Tuesday, August 25, 1868," *Press*, August 25, 1868, 2.

⁸⁵ "Social Summary," *Lyttelton Times*, September 4, 1868, 2.

⁸⁶ "Arrival of the Barque Southern Cross, with Trout Ova and Live Perch," *Star*, September 16, 1868, 2.

⁸⁷ *Ibid.*

⁸⁸ "Local and General," *Star*, September 22, 1868, 2.

⁸⁹ *Ibid.*

⁹⁰ "Acclimatisation Society," *Press*, September 26, 1868, 2.

⁹¹ *Ibid.*

and by the 17th of October their ranks had swelled to almost 500.⁹² It is apparent that the hatching took place in two distinct batches separated by 12 days.⁹³ Likely because of the number of trout that hatched, there was a far greater public demand for knowledge than the year prior, to the extent that the *Lyttelton Times* even dispatched a reporter to tour the grounds with Andrew Johnson in order to adequately inform their readers.⁹⁴ The column that followed detailed the entire process from receipt of the ova through to hatching in precise detail that must have been of utter fascination to the curious readers. The publication of the various accounts of the successful raising of the trout elicited several letters to the editor exclaiming great pleasure at the future prospects that this introduction would afford.⁹⁵ Although the technology used by the CAS sounds archaic relative to modern science, at the time it would have been at the cutting edge of pisciculture. This scientific advancement was fostered through numerous international articles on the subject that featured in newspapers, and the communication with the Tasmanian Acclimatisation Society.

⁹² "Local and General," *Star*, October 17, 1868, 2.

⁹³ "Acclimatisation," *Lyttelton Times*, November 6, 1868, 2.

⁹⁴ "The Trout," *Lyttelton Times*, October 19, 1868, 2.

⁹⁵ "Correspondence," *Star*, November 9, 1868, 3.

Chapter Three: Spreading trout throughout province and country, 1868-1872

‘The introduction of trout to this province [...] may now be considered *un fait accompli*.’
- *Lyttelton Times*⁹⁶

Now that the CAS was in possession of a small brood of trout the topic for debate turned to how to distribute them once they reached an appropriate maturity. At the 1868 November bi-annual general meeting of the CAS Andrew Johnson recommended that:

100 should be retained by the society, and the remainder sold to members possessing suitable accommodation; that none of the present batch should be placed at large in the Avon, but should be confined by wire netting to the head water or tributary streams; [...] that in addition to the fish proposed to be forwarded to Lake Coleridge some should be sent to the Peninsula, to be placed in a well-adapted stream, where Mr. Stoddart has offered to take care of them.⁹⁷

There was a general belief amongst the committee that localities close to Christchurch should receive preference, and that there should be a restriction on the number of fish an individual person be permitted to take. The *Lyttelton Times* later noted: ‘Many of our streams are well adapted to trout, and if the young fry are allowed to remain undisturbed for a brief period after being set at liberty, their final establishment in the province may be regarded as certain.’⁹⁸ On the 14th of November, the CAS met again to attempt to resolve the distribution of trout.⁹⁹ There are numerous discrepancies in the various sources regarding the figures of trout released, however the figures that follow represent the distribution that was planned by the CAS on the 14th of November:

100 fish would be retained by the CAS, 50 fish were to be turned out in the Avon between Wood’s Mill and the bridge, a further 50 fish were to be turned out in the upper waters of the Avon, 20 fish were to be put into the creek of Mr. Peacock if it was found to be suitable, 30 fish were to be entrusted to the care of Mr. Stoddart to be turned out in Charteris Bay and the Purau streams, 40 fish were to be released into the upper reaches of the Heathcote, 30 fish were to be entrusted to Mr. Oakden, although it is not apparent precisely where they were released and finally, 40 fish were to be released into the Irwell stream near the Selwyn Railway Station.¹⁰⁰

Although it is difficult to pin down specific dates on which trout were released, it is apparent that the process of distributing the trout commenced almost immediately. At the November meeting of the CAS, a letter was read from Mr Stoddart that stated he

⁹⁶ Ibid.

⁹⁷ “Acclimatisation Society,” *Lyttelton Times*, November 2, 1868, 2.

⁹⁸ “Acclimatisation,” *Lyttelton Times*, December 4, 1868, 2.

⁹⁹ “Acclimatisation Society,” *Lyttelton Times*, November 14, 1868, 2.

¹⁰⁰ Ibid.

had observed one fish that had managed to escape the confines of the breeding box and had attained a size approximately double that of its brethren.¹⁰¹ This news likely motivated the CAS to immediately release 100 young trout into the Acclimatisation ponds and a further 80 into the river Avon by the 28th of November 1868. Following the local releases into the aforementioned sites, there was an increasing willingness to consider release sites further afield. For instance, Mr Jennings of Rangiora requested and received a number of trout to be placed in the headwaters of the River Cam that ran through his property.¹⁰² Similarly, on the 31st of December it was reported that Mr Oakden had successfully turned out 20 fish into Lake Coleridge,¹⁰³ and on the 5th of January 1869 that Mr Jollie had also turned out 20 fish into a small stream that bordered his property just five miles from the mouth of the Rakaia.¹⁰⁴ By the end of the year the precise figures, as noted by Samuel Farr, were: ‘433 young trout turned out as follows – 164 in the river Avon, 12 in the Heathcote, 25 in the Purau stream, 40 in the river Irwell, 20 in Lake Coleridge, 20 in the Cam, 20 in the Little Rakaia, 10 in Mr Jennings’s ponds at Rangiora, 10 in Mr Peacock’s ponds at St Albans, and 112 retained in the Society’s ponds.’¹⁰⁵ Trout, once simply a forlorn dream of colonists, were now spreading fast throughout the wider Canterbury region.

Now that trout had been established in the province, it was imperative that the CAS sought to do everything in its power to protect them. At the January 1869, meeting it was proposed that the CAS apply under the *Salmon and Trout Act 1867* for the protection of the main rivers into which trout were liberated.¹⁰⁶ The Avon River above the Colombo Street Bridge was considered to be the most worthy of protection, and by the end of the meeting it was resolved that whilst an application would be made in regard to the Avon, other streams would remain unrestricted for the present.¹⁰⁷ On the 24th of March, the Superintendent of the Canterbury province, William Rolleston, instated the following regulation:

No person shall, without the consent in writing, of the Superintendent, or in his absence, of the Provincial Secretary, fish in that part of the River Avon from its source to the Colombo street bridge, in the city of Christchurch, or in the tributaries of the said river,

¹⁰¹ “Acclimatisation Society,” *Lyttelton Times*, November 28, 1868, 2.

¹⁰² “Local and General,” *Star*, November 28, 1868, 2.

¹⁰³ “Local and General,” *Star*, December 31, 1868, 2.

¹⁰⁴ “Latest Telegrams,” *Press*, January 5, 1869, 2.

¹⁰⁵ S.C. Farr, *History of Trout Culture in Canterbury, N.Z.*, p.5.

¹⁰⁶ “Acclimatisation Society,” *Lyttelton Times*, January 23, 1869, 2.

¹⁰⁷ *Ibid.*

and any person infringing this regulation shall be liable to a penalty of £50, or to such portion only of such penalty as the justices before whom such penalty is sought to be recovered shall think fit.¹⁰⁸

This order was explicitly made for the protection of the young trout that now resided in the Avon and represents one of the earliest angling regulations in the country. Until 1875, when fishing was eventually permitted, there was only one application to the Superintendent for an exemption by Mr Travers Jr. in March of 1872 so that he might continue his scientific research into native fish.¹⁰⁹ By mid-July 1869, the two ‘truant trout’ that the CAS retained from the first three brown trout to hatch in New Zealand, now almost two years old, had begun to prepare their spawning beds.¹¹⁰ Those hatched from the 1868 importation ‘continue to thrive and grow, and have frequently been seen in the exact spots where they were turned out in the various rivers.’¹¹¹ The sight of trout in central Christchurch evidently stimulated thoughts of angling, for in September of 1869 the first offenders to be tried under the *Salmon and Trout Act 1867* were summoned before the court. George Howard, Henry Howard and Alfred Fielding, all aged about eleven, were alleged to have illegally fished in the river Avon between the Colombo and Victoria bridges.¹¹² The charge was proved, however, the boys were deemed ignorant of the restriction and accordingly were let off with a caution. Similar charges in subsequent years followed the same pattern and it appeared that even with the publication of the restriction in the newspapers, the public was simply not aware of the prohibition on angling in the Avon. A similar occurrence took place the following year,¹¹³ necessitating the explicit clarification of the law in *The Press*.¹¹⁴

¹⁰⁸ “The Press. Friday, April 9, 1869, Latest Telegrams,” *Press*, April 9, 1869, 2.

¹⁰⁹ “Local and General,” *Star*, March 23, 1872, 2.

¹¹⁰ “News of the Day,” *Press*, July 24, 1868, 2.

¹¹¹ *Ibid.*

¹¹² “Christchurch,” *Star*, September 30, 1869, 2.

¹¹³ “Magisterial,” *Star*, November 17, 1870, 2.

¹¹⁴ “News of the Day,” *Press*, December 9, 1870, 2.



Figure 4. Commemorative plaque marking the site of the original hatchery where the CAS raised trout, 1967

[Source: Author's collection]

Despite the successful liberation of trout into the rivers around Christchurch, and the retention of breeding stock in the Acclimatisation grounds, the CAS continued to import brown trout ova for many years to come. In October of 1869 the OAS received a significant shipment from Tasmania, and allocated approximately 500 ova for Canterbury at a cost of £9 8s 6d.¹¹⁵ Because of the premature hatching of these fish, the actual transportation from Otago to Canterbury had to be delayed until the fish were sufficiently mature to survive the arduous journey.¹¹⁶ As a result of this impending increase in stock, the CAS placed an advertisement in the local newspapers on the 20th of November stating: 'The Acclimatisation Society will shortly have live trout for sale at £2 per dozen.'¹¹⁷ The trout from Otago were eventually brought up to Canterbury on the *Maori* on the 2nd of December, minus a dozen taken by Messrs Sleek and Howell to be liberated into the Tengawai River near Timaru.¹¹⁸ Within three weeks of placing the advertisement for the sale of trout, the CAS had received a significant number of applications. In the end, it was resolved

¹¹⁵ "Local and General," *Star*, October 9, 1869, 2; "Acclimatisation Society" *Star*, November 13, 1869, 2.

¹¹⁶ "Acclimatisation Society," *Star*, October 23, 1869, 2.

¹¹⁷ "Page 3 Advertisements Column 3," *Press*, November 20, 1869, 3.

¹¹⁸ "The Timaru Herald.y [sic] Saturday, December 4, 1869. By Electric Telegraph," *Timaru Herald*, December 4, 1869, 2.

that some 24 dozen would be distributed amongst 13 applicants on the proviso that they state the intended destination of the trout prior to taking possession.¹¹⁹ Through such a system the CAS would be able to furnish the province with a significant supply of brown trout, whilst recouping on the costs of acquiring and raising the trout. However, only four dozen of these fish could be distributed before, in early January 1870, the young trout undertook a mass exodus¹²⁰ and escaped into unfinished ponds leading to the Avon.¹²¹ Andrew Johnson believed that the trout escaped through openings in the ground made by eels and, whilst 15 trout were recaptured, a great number affected their escape onwards into the Avon.¹²² The CAS was able to see the silver lining though: ‘although this accident has caused considerable financial loss to the society and disappointment to the intended purchasers of the fish the public will not suffer, as the loss will tend to stock the Avon more fully with trout.’¹²³ With so much of their effort focused upon the River Avon, extreme measures were being adopted to protect the fish released into the river while they were young and vulnerable to predation. On the 2nd of April, *The Press* ran the following: ‘It was also determined that in order to protect the trout in the River Avon the Provincial Secretary be requested to authorise the police to shoot or otherwise destroy all shags within the city of Christchurch.’¹²⁴ In May of 1871, to ensure the successful spawning, the CAS even decided to offer a reward for the destruction of shags: ‘It is necessary, if we desire to successfully stock the ponds and rivers of the province with trout, that this bird should be got rid of.’¹²⁵

In mid-1870 the stocks of the CAS began to swell through natural means. Although the CAS earlier believed there would be little chance of breeding the two original trout hatched in 1867,¹²⁶ in late August 1870 Andrew Johnson was able to successfully hatch ova from these fish.¹²⁷ These hatchlings represent the first brown trout to have been spawned in Canterbury. In essence they are the first generation of entirely New Zealand trout. Furthermore, although the CAS was sceptical as to the

¹¹⁹ “The Press. Saturday, December 11, 1869. News of the Day,” *Press*, December 11, 1869, 2.

¹²⁰ “Local and General,” *Star*, January 8, 1870, 2.

¹²¹ “Acclimatisation Society,” *Star*, January 25, 1870, 2.

¹²² “Acclimatisation Society,” *Star*, February 4, 1870, 2.

¹²³ *Ibid.*

¹²⁴ “News of the Day,” *Press*, April 2, 1870, 2.

¹²⁵ “News of the Day,” *Press*, May 27, 1871, 2.

¹²⁶ “Acclimatisation Society,” *Star*, February 4, 1870, 2.

¹²⁷ “Local and General,” *Star*, August 31, 1870, 2.

viability of the ova from the 1868 batch of trout, these too were able to hatch out successfully.¹²⁸ By the 12th of October 1870, the number of fish in the Acclimatisation ponds had grown from approximately 15 to almost 200.¹²⁹ Despite the scare at the end of 1869, it seemed that the CAS would once again be able to fulfill the requests to furnish the province with a supply of brown trout. As a result of this successful spawning, the CAS once again proposed to sell trout at a cost of £2 per dozen. At this time, only the Otago and Canterbury Societies had managed to procure a good head of trout, so unsurprisingly the CAS began to receive requests from other acclimatisation societies as far afield as Auckland for a supply of brown trout.¹³⁰ Whilst the Society expected to be able to oblige, they felt they were unable to meet the requests of the Auckland and Nelson Societies until the requests for trout made by members of the CAS were satisfied.¹³¹ In the meantime, the distribution of these young trout continued in the local vicinity. On the 2nd of February 1871, *The Press* ran a detailed account from a contributor who was coincidentally present for the introduction of brown trout to Mr Oakden's station en-route to Lake Coleridge.¹³² He remarked that: 'in another pond close by, are some trout of a more advanced size averaging 2 to 3 pounds. Some of these have spawned ere this, and to judge from what I saw, if more gentlemen took the same interest in acclimatisation that Mr Oakden does, the trout family would soon become very numerous in Canterbury.'¹³³ Communication continued with the Auckland Acclimatisation Society and, on the 26th May 1871, 'it was resolved that the Auckland Society be informed that should the spawning be successful the Canterbury Society will offer kindred societies an opportunity of purchasing ova.'¹³⁴ By the 29th of July, the CAS had agreed to sell a 'certain number, in proportion to the orders received, up to five hundred' trout for £5 per 100 trout to the Auckland Society.¹³⁵ Spawning again took place across the middle of the year and 632 ova placed in the 'trout-house' had hatched into young trout,¹³⁶ along with numerous natural births bringing the total to 1823.¹³⁷ Despite the persistent requests from Auckland, and the

¹²⁸ Ibid.

¹²⁹ "Local and General," *Star*, October 12, 1870, 2.

¹³⁰ "Local and General," *Star*, October 29, 1870, 2.

¹³¹ "Acclimatisation Society," *Press*, November 19, 1870, 2.

¹³² "A visit to the coal fields, by the loafer in the street," *Press*, February 2, 1871, 2.

¹³³ Ibid.

¹³⁴ "Acclimatisation Society," *Star*, May 27, 1871, 3.

¹³⁵ "Acclimatisation Society," *Press*, July 29, 1871, 4.

¹³⁶ "Acclimatisation Society," *Press*, October 21, 1871, 2.

¹³⁷ S.C. Farr, *History of Trout Culture in Canterbury, N.Z.*, p.10.

fact that there is little mention of requests from the Wellington Acclimatisation Society in the records of the CAS, on the 15th of November 1871 approximately 100 young trout were sent to the Wellington Society on the *S.S. Tairua*.¹³⁸ They arrived the following day and were liberated into a tributary of the Hutt River as well as a site thought suitable for breeding purposes.¹³⁹ The Wellington Society stated that they were: ‘indebted to Canterbury for the supply, and although the society there are compelled to charge for them, we should, but for their exertions, have had to wait for years for a supply and to have incurred a cost which we are afraid our citizens would scarcely have been ready to meet.’¹⁴⁰ The only other society to receive trout from the CAS in 1871 was the Wanganui Society, who received 50 trout.¹⁴¹ The Canterbury Society was, therefore, not simply facilitating the introduction of brown trout on a local scale but on a national one as well (see figure five).

Province	Number of trout received from CAS, 1868-1873
Auckland	0
Canterbury	3,738
Hawkes Bay	250
Marlborough	0
Nelson	20
Otago	250
Taranaki	100
Wellington	250
Total	4,608

Figure 5. Collation of approximate numbers of trout distributed by CAS to various provinces, 1868-1873

[Source: S.C. Farr, *History of Trout Culture in Canterbury, N.Z.*, p.9-11.]

Locally, the success of the introduction was becoming more apparent by the day as frequent sightings of increasingly large trout were reported in the newspapers. In February 1872 ‘a number of fish, from one foot to one foot and a half in length, have been seen in the Avon for some days past between Victoria and Colombo bridges.’¹⁴² Similarly, in March of 1872 Samuel Farr, the secretary of the CAS from 1870-1890,

¹³⁸ “Local and General,” *Star*, November 16, 1871, 2.

¹³⁹ “Local and General,” *Star*, November 21, 1871, 2.

¹⁴⁰ *Ibid.*

¹⁴¹ S.C. Farr, *History of Trout Culture in Canterbury, N.Z.*, p.10.

¹⁴² “Local and General,” *Star*, February 29, 1872, 2.

noticed a trout in the Grehan mill race in Akaroa, which he managed to capture and measure at 13 inches in girth.¹⁴³ Spurred on by these successes, introductions continued into virtually every watercourse in Canterbury. In April, the CAS determined to release '50 fish into the north branch of the Waimakariri [...] 50 in the Ashley, 25 in Lake Forsyth [with costs defrayed by the Superintendent], and 25 in the river Hororata [with costs defrayed by Mr Bealey].'¹⁴⁴ Over the winter spawning period, the actions of the trout were even more apparent than previous years, with several prominent spawning beds observed in the Avon itself.¹⁴⁵ As a result of the spawning in the Acclimatisation grounds alone there was a net gain of nearly 2,000 fish.¹⁴⁶ Of these, some 1,493 trout were sold at a rate of £10 per 100 fish. In 1872 especially there was a strong distribution to various provinces around the country. Otago applied for 500 trout¹⁴⁷ and received approximately 250,¹⁴⁸ Napier also applied for 200 trout¹⁴⁹ and received 250,¹⁵⁰ and the Taranaki Provincial Government received 100 trout.¹⁵¹ Amongst the unspecified distributions, several were also for more distant areas in the Canterbury province such as Timaru or Orari.¹⁵²

By the end of 1872 there was a noticeable decrease in the mention of trout in the newspapers. Naturally the CAS's reports frequently mentioned trout, but it was less common that the fish were referred to in more general news. It is not that the CAS was not still rearing and distributing trout, it is simply that the process was, by now, much like the year before and the year before that. The end of 1872 also represents an ideal time to conclude the study of the introduction of brown trout to Canterbury. Excitement now, both amongst the public and the CAS, appeared to have shifted towards making a real attempt to bring anadromous salmon into Canterbury. Upon the introduction of salmon ova visitors thronged to see the newly introduced salmon in the Acclimatisation grounds.¹⁵³ The battle to establish brown trout had essentially been won, and the public fascination for the process appeared to have shifted. In

¹⁴³ "Acclimatisation Society," *Star*, March 9, 1872, 3.

¹⁴⁴ "Acclimatisation Society," *Star*, April 27, 1872.

¹⁴⁵ "Local and General," *Star*, July 18, 1872, 2.

¹⁴⁶ "Local and General," *Star*, October 16, 1872.

¹⁴⁷ "Local and General," *Star*, November 1, 1872, 2.

¹⁴⁸ S.C. Farr, *History of Trout Culture in Canterbury, N.Z.*, p.11.

¹⁴⁹ "Local and General," *Star*, November 1, 1872, 2.

¹⁵⁰ S.C. Farr, *History of Trout Culture in Canterbury, N.Z.*, p.11.

¹⁵¹ *Ibid.*

¹⁵² *Ibid.*

¹⁵³ "Acclimatisation Society," *Star*, October 25, 1873, 3.

November 1873, the Governor General of New Zealand, Sir James Ferguson, visited Christchurch where he was presented with a brown trout weighing 9¾ lbs.¹⁵⁴ As the Governor General acknowledged, it was the ‘first trout used for table purposes in Canterbury.’¹⁵⁵ It was a further testament to the success of their stocking programme that, on the 30th of December 1874, the CAS followed in the footsteps of the OAS and recommended that a fishing season be instituted: ‘The council of the Acclimatisation Society have determined to ask the superintendent to proclaim the months of January, February, and March, 1875, a time when trout may be taken by rod and line in the River Avon, by persons holding licenses from the society, under the condition that any fish caught not exceeding eight inches in length is to be returned to the river.’¹⁵⁶ Trout had existed in Canterbury for less than 10 years, and yet the population was already self-sufficient enough that it was deemed safe to open it up to angling. In that time, the CAS had built a stock from just three fish to countless thousands of fish spread across the Canterbury province. The CAS continued to raise and stock trout for a great number of years, but by 1872 one thing was clear: trout were a permanent fixture in the lakes and rivers of Canterbury.

¹⁵⁴ “Acclimatisation Society,” *Star*, January 10, 1874, 2.

¹⁵⁵ *Ibid.*

¹⁵⁶ “News of the Day,” *Press*, December 30, 1874, 2.

Chapter Four: Why were trout introduced at all?

‘English gentlemen [...]were to render the fern-clad mountains and swampy plains of New Zealand an earthly Elysium [...] real British trout of the highest breed were to dart athwart the mountain torrents, the genuine British thrush and robin redbreast were to enliven the woods with their well-known notes, and everything, under a brighter sky and a purer air, was to recall the image of England.’

- *Lyttelton Times*¹⁵⁷

The first three chapters of this paper have addressed ‘how’ and ‘when’ brown trout were introduced to Canterbury. In contrast, this section will demonstrate ‘why’ brown trout were introduced to New Zealand and why their introduction was of such significance at the time.¹⁵⁸ It is plain that trout were not simply seen as a source of food, but that there was also an intrinsic and emotive aspect to their introduction. I believe there are three reasons why such effort was made to introduce trout to New Zealand. First, trout offered significant recreational opportunities to colonists with an angling persuasion. Second, trout had long been a source of food in the United Kingdom, albeit not an essential one. Third, and perhaps most difficult to demonstrate, there was an innate perception amongst colonists that rivers and lakes should have trout in them. I have already stated that the introduction of brown trout to Canterbury has evaded intensive study, and thus far trout have also been largely omitted from general environmental histories of New Zealand. Where trout are mentioned in scholarship, it is frequently in an overtly scientific context with regard to the destruction of native fisheries.¹⁵⁹

In one of the first works on acclimatisation in New Zealand, *The Naturalisation of Animals and Plants in New Zealand*, George Thomson believed the introduction of trout, and other freshwater fishes, to be one of the few truly beneficial achievements of the acclimatisation societies.¹⁶⁰ Whilst Thomson does note the eating calibre of trout, the primary benefit he alludes to is in the sporting domain. Although Thomson’s work is more documentation than analysis, this acknowledgement of the sporting benefits of trout suggests it to have been one of the primary motives for their

¹⁵⁷ “The Canterbury Settlement,” *Lyttelton Times*, June 4, 1853, 7.

¹⁵⁸ This analysis will not be specific to Canterbury as the motivations were shared across the nation.

¹⁵⁹ Angus McIntosh, Peter McHugh (et al), ‘The impact of trout on galaxiid fishes in New Zealand’, *New Zealand Journal of Ecology*, Vol.34, No.1, (2010): 195-206.

¹⁶⁰ George Thomson, *The Naturalisation of Animals and Plants in New Zealand* (London: Cambridge University Press, 1922), p.212.

introduction. Subsequently, in *The Invasion of New Zealand by People, Plants and Animals*, Andrew Hill Clark builds upon the work undertaken by Thomson but offers more insight into the utopian motivation of the acclimatisation societies: 'The landed class wanted the familiar sporting animals, and the far more numerous members of the underprivileged classes, especially those who had lived for a generation in the relative freedom of pioneer life, were even more avid to enjoy the sport and food available to their fathers only at a poacher's risk.'¹⁶¹ Clark's statement demonstrates two of the reasons, stated above, for the introduction of trout: the sporting opportunities and the familiarity. As R. M. McDowall, who has written the most substantial modern history on acclimatisation societies in New Zealand, notes: 'in early colonial New Zealand there was nothing to prevent them [colonists] from going hunting or fishing, except that the right species were not present.'¹⁶² It was this desire not to miss out on such recreational pursuits as were available 'back home,' but also, in true egalitarian fashion, to make these pursuits more widely available than they were at 'home,' that motivated the introduction of brown trout to New Zealand.¹⁶³ This mindset had ramifications beyond its time period, for as Paul Star maintains: 'the freedom to hunt and fish in New Zealand (for those that choose to) has produced the familiar image of the New Zealand male as "a good keen man."¹⁶⁴ Adrian Franklin's anthropological examination of the introduction of trout to Tasmania holds that their introduction 'not only promised [colonists] a notional social elevation, but it also made their migration to Tasmania, not always under the most auspicious circumstances, more worthwhile because in offering access to trout for all regardless of station, Tasmania held the potential for a better, more equal kind of society.'¹⁶⁵ Human migration to New Zealand is inherently connected with issues of class,¹⁶⁶ thus it should come as little surprise that the introduction of trout is imbued in a similar ethos.

¹⁶¹ Andrew Hill Clark, *The Invasion of New Zealand by People Plants and Animals* (New Brunswick: Rutgers University Press, 1949), p.266.

¹⁶² R.M. McDowall, *Gamekeepers for the Nation*, p.7.

¹⁶³ The ongoing veracity of this statement is evident in current legislation that stipulates that no private individual may charge a fee for fishing rights. Such rights are unfettered by landownership; s26ZN, *Conservation Act 1987*.

¹⁶⁴ Paul Star, 'New Zealand Environmental History: A Question of Attitudes', *Environment and History*, Vol.9. No.4 (2003), 472.

¹⁶⁵ Adrian Stephen Franklin, 'Performing Acclimatisation: The Agency of Trout Fishing in Postcolonial Australia', *Ethnos: Journal of Anthropology*, Vol.76, No.1 (2011), 25.

¹⁶⁶ James Belich, *Replenishing the Earth: the Settler Revolution and the Rise of the Anglo-World* (Oxford: Oxford University Press, 2009), p.153.

Recreation and consumption may, therefore, be accepted as two of the primary motivations behind the introduction of brown trout to New Zealand; however, they do not provide a complete understanding of why such effort was exerted. In *Naturalized Animals*, Christopher Lever identifies numerous reasons why an animal might be introduced, amongst them ‘as a source of food; [...]for sporting purposes; [...] for sentimental or nostalgic reasons.’¹⁶⁷ Similarly, R.M. McDowall notes that ‘Some [species] were desired simply to be seen or heard around the houses of settlers.’¹⁶⁸ Thus this notion of familiarity or nostalgic attachment appears credible. Paul Star verifies this in stating: ‘The acclimatisation of some birds was justified by their being insectivorous, and game and fish had nutritional value, but the prime motivation was sentiment.’¹⁶⁹ William Morrell, writing in 1935, wrote of the duplication of British lifestyle in New Zealand: ‘The same food can be eaten; the same clothing can be worn; the same birds and animals can be successfully acclimatized; the same games can be played.’¹⁷⁰ This notion further accords extremely well with Alfred Crosby’s point in *Ecological Imperialism* that: ‘The migrants [English colonists] wanted to go where they could be more comfortably European in lifestyle than at home, not less.’¹⁷¹ Implicit in Crosby’s thesis is the idea of re-creating the environment a migrant has left in the environment they have come to live in. Although the examples Crosby utilises typically centre on agricultural food source animals, it is a reasonable analogy to extend this idea to those animals that colonists have a strong association with, either as a sporting pursuit or simply as a feature of their environment. To colonists, a nation devoid of salmonids would have seemed unusual, erroneous, and in need of rectification. One need only read accounts of the descriptions of early colonists’ experiences with native fish to understand that the concept of a ‘trout’ was deeply instilled in the colonists’ mentality. Thus native species, bearing only superficial resemblance to a trout, were referred to as ‘bull trout,’¹⁷² ‘small speckled

¹⁶⁷ Christopher Lever, *Naturalised Animals* (London: T & A D Poyser Ltd, 1994), p.xi

¹⁶⁸ R.M. McDowall, *Gamekeepers for the Nation*, p.9.

¹⁶⁹ Paul Star, “Humans and the Environment in New Zealand, C. 1800-2000,” in *The New Oxford History of New Zealand* ed. by Giselle Byrnes (Melbourne: Oxford University Press, 2009), p.52.

¹⁷⁰ William P. Morrell, *New Zealand*, (London: Ernest Benn Ltd, 1935), p.337.

¹⁷¹ Alfred Crosby, *Ecological Imperialism: The Biological Expansion of Europe 900-1900* (Cambridge: Cambridge University Press, 2004), p.298.

¹⁷² “English Extracts,” *Nelson Examiner and New Zealand Chronicle*, Vol V, October 3, 1846, 123.

mountain trout’¹⁷³ or as an ‘eel pont (a species of trout).’¹⁷⁴ Trout, as a species, constituted a fundamental basis of colonists’ understanding of freshwater ecology. Therefore, Crosby’s work is not at all inconsistent with the concept postulated by Clark some half-century prior. The idea that colonists would have gone to such effort to introduce true trout to New Zealand simply because trout existed in the streams from where the colonists originated can be seen to be borne out in the works of Crosby, Clark, Star and McDowall. The motivations for trout as a food source and recreational pursuit alone do not adequately account for the urgency with which their introduction was desired but, read in conjunction with this innate perception amongst colonists that fresh water should have trout in it, the true motivation behind the introduction of trout to New Zealand can be understood.

¹⁷³ “Mr Sutton’s Journal,” *New Zealand Colonist and Port Nicholson Advertiser*, Vol.1, Issue 12, September 9 1842, 4.

¹⁷⁴ “Mr Torlesse’s Report Upon the Canterbury Block,” *Lyttelton Times*, Vol.1, Issue 26, July 5, 1851, 7.

Conclusion

‘Today, after over 100 years presence in our waters [...] [trout] have probably settled into about as many river systems and habitats as they can adapt to, and without doubt it is the brown trout that is the most widely distributed and abundant of these two famous trouts, and also supports the greatest angling effort.’

- R.M. McDowall¹⁷⁵

Within ten years, the Canterbury province underwent a dramatic ecological transformation from being entirely devoid of salmonids to having a thriving population of brown trout in many of its rivers and lakes. Three primary motivations influenced the introduction of brown trout by the CAS: the desire for trout as a recreational pursuit, for trout as a food source, and the innate perception that waterways should have trout in them. This essay has extensively documented the process by which they were introduced above. Every step on this journey is, in its own way, an impressive achievement. Considering the risk and mortality rates for humans on sea voyages from Europe in the mid-19th century it is truly staggering that acclimatisation societies and individuals were able to transport trout ova some 19,000kms, albeit with a lengthy stopover in Tasmania, in vessels as rudimentary as a wooden box filled with wet moss. These trout were then raised in captivity, with the exception of the odd truant, until they produced progeny of their own. Following this breeding pattern, and supplementing it with subsequent importations, the CAS was able to raise a large enough stock that they could distribute trout throughout the province and nation at a small cost. Today anglers, both from New Zealand and those that travel from every corner of the world to fish for brown trout, owe great thanks to the CAS for their efforts some 140 years prior.

If there is one person to whom the responsibility for the introduction of brown trout to Canterbury should ultimately be attributed to, it is the curator of the CAS, Andrew Johnson. It is a testament to the importance of in-depth primary research that Andrew Johnson’s vital contribution to the history of brown trout in Canterbury has been recovered. It is important to acknowledge the immense personal voyage that he undertook in this period as well, from his failed introduction in 1864, to his only moderately more successful attempt in 1867 to rearing thousands of young trout from

¹⁷⁵ R.M. McDowall, *Gamekeepers for the Nation*, p.247.

1870 onwards. Sadly, likely as a result of a personal feud between himself and Samuel Farr that ultimately led to his dismissal from the CAS in 1875, Andrew Johnson has not received the credit that he is due.¹⁷⁶ R. M McDowall, for instance, does not even acknowledge Andrew Johnson in his discussion of who was most responsible for the introduction of brown trout to New Zealand.¹⁷⁷ Brown trout would undoubtedly have made it to Canterbury in time, but the dedication and willingness of Andrew Johnson to facilitate the introduction of his own volition and out of his own finances ensured that, in 1867, the CAS was in possession of the first living brown trout in New Zealand. His ongoing contributions as the curator of the Society resulted in an extremely viable breeding stock of brown trout. Because the CAS was one of the pioneering acclimatisation societies, and distributed brown trout throughout the country, a great number of modern trout in every far-flung corner of New Zealand could potentially trace their lineage back to a trout raised by Andrew Johnson.



Figure 6. A probable descendant of a trout raised by Andrew Johnson
[Source: Author's collection]

¹⁷⁶ For further detail of the disagreement see; "Acclimatisation Society," *Star*, September 8, 1875, 2.

¹⁷⁷ R.M. McDowall, *Gamekeepers for the Nation*, p.251.

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